

REMARKS

I. Introduction

With the addition of new claims 33 to 35, claims 17 to 35 are currently pending in this application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority. However, Applicants note that neither the Office Action Summary nor the Detailed Action indicates whether the copy of the certified copy of the priority document has been received from the International Bureau. The "Notification of Missing Requirements Under 35 U.S.C. 371 in the United States Designated/Elected Office (DO/EO/US)" dated March 27, 2002 indicates that the Office has received the priority document. Applicants respectfully request an acknowledgment of receipt of the copy of the certified copy of the priority document with the next Office communication.

Applicants request that the Examiner consider the Information Disclosure Statement, PTO-1449 paper and cited references filed on January 3, 2002 and that an initialed copy of the PTO-1449 paper be returned to Applicants with the next Office communication.

II. Rejection of Claims 17 to 31 Under 35 U.S.C. § 112

Claims 17 to 31 were rejected under 35 U.S.C. § 112, first paragraph for allegedly containing subject matter not described in the Specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the invention.

Specifically, the Office Action alleges that page 2, lines 15 to 33 and page 3, line 31 disclose the substrate as

"esterified" but page 4, line 35 disclose that the reaction is an "etherification".

As an initial matter, the Office bears the initial burden of presenting "evidence or reasons why persons skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims." (See M.P.E.P. § 2163.04 (citing In re Wertheim 541 F.2d 257, 262, 265, 191 U.S.P.Q. 90, 96, 98 (C.C.P.A. 1976))) (emphasis added). The Manual of Patent Examining Procedure also provides that if an examiner rejects a claim based on the lack of a written description, the examiner should "identify the claim limitation not described" and provide "reasons why persons skilled in the art would not recognize the description of this limitation in the disclosure of the application." (See id.). However, the written description requirement is not an in haec verba requirement. That is, "the specification 'need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the [filing] date the applicant had invented what is now claimed.'" All Dental Prodx LLC v. Advantage Dental Products Inc., 64 U.S.P.Q.2d 1945, 1948 (Fed. Cir. 2002) (quoting Eiselstein v. Frank, 52 F.3d 1035, 1038, 34 U.S.P.Q.2d 1467, 1470 (Fed. Cir. 1995)). Moreover, a "failure of the specification to specifically mention a limitation that later appears in the claims is not a fatal one when one skilled in the art would recognize upon reading the specification that the new language reflects what the specification shows has been invented." All Dental Prodx, 64 U.S.P.Q.2d at 1948 (citing Eiselstein, 52 F.3d at 1039, 34 U.S.P.Q.2d at 1470). An applicant can show "possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention." M.P.E.P. § 2163 (citing Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997)).

The Office Action admits that the Specification at page 2, lines 15 to 33 and page 3, line 31 discloses that the substrate is esterified. Given this disclosure it is clear that the Applicants were in possession of the invention as claimed in claims 17 to 31, which recite the step of esterifying the ceramic surface areas of the ceramic hybrid substrate. Notwithstanding the above, however, the Specification has been amended, without prejudice, for clarity purposes, to replace the p. 4 reference to "etherification" with "esterification". Support for this amendment may be found, for example, at page 2, line 24. Therefore, withdrawal of the 35 U.S.C. § 112 rejection and allowance of claims 17 to 31 is respectfully requested.

Regarding the Office Actions' allegation that it is "not clear that either esterification or etherification adequately defines the chemical reactions that are occurring in the claimed invention", Applicants respectfully submit that esterification properly represents the type of chemical reaction on which the method is based. See Office Action at p. 3. As confirmed by the translated first paragraph of the attached excerpt from Römpps Chemical Lexicon (Version 2.0, 1999), "silicates" come under "silicic acid esters". These form on account of a so-called condensation reaction in which water is split off, and which corresponds to the reaction shown in Figures 4 and 5 of the present application. Therefore, Applicants submit that "esterification" clearly defines the chemical reactions that are occurring in the claimed invention.

III. Rejection of Claims 17 to 19 and 22 to 31 Under 35 U.S.C. § 112

Claims 17 to 19 and 22 to 31 were rejected under 35 U.S.C. § 112, first paragraph as allegedly not enabling a person skilled in the art to make and use the invention commensurate in scope with the claims.

Specifically, the Office Action alleges that the Specification, while being enabling for treating the substrate

with a siloxane, does not reasonably provide enablement for any material being used to treat the substrate. Applicants respectfully disagree for the following reasons.

M.P.E.P. § 2164 states that when the subject matter is not in the Specification portion of the application as filed but is in the claims, the limitation in and of itself may enable one skilled in the art to make and use the claim containing the limitation.

M.P.E.P. § 2164.01 states that the standard for determining whether the Specification meets the enablement requirement was cast in the Supreme Court decision of Mineral Separation v. Hyde, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? Accordingly, the test for enablement is whether a person skilled in the art could practice the claimed invention without undue experimentation. M.P.E.P. § 2164.01 (a) requires that the Examiner consider all of the following factors in determining whether any experimentation is "undue":

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

M.P.E.P. § 2164.01 (a) states that it is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. The Examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of nonenablement must be based on the evidence as a whole.

Applicants submit that the Office Action has not presented a prima facie case of lack of enablement as no

consideration has been presented as to all of the above requisite factors, as required by M.P.E.P. § 2164.01 (a). Accordingly, withdrawal of this rejection is respectfully requested. Applicants further submit that the Specification and the limitations of claims 17 to 19 and 22 to 31, in and of themselves, as per M.P.E.P. §2164, enable one skilled in the art to make and use the invention as claimed in claims 17 to 19 and 22 to 31. Independent claim 17, upon which claims 18, 19 and 22 to 31 ultimately depend, recites the step of esterifying the ceramic surface areas. Further, the Office Action admits that the Specification discloses esterifying the ceramic surface areas with siloxane. See Office Action at p. 2, par. 3. Applicants submit that one skilled in the art would not have to unduly experiment to achieve the step of esterifying the ceramic surface areas in light of the disclosure in the Specification of the use of siloxane to esterify the ceramic surface.

Therefore, Applicants submit that claims 17 to 19 and 22 to 31 are enabling. Accordingly, withdrawal of the 35 U.S.C. § 112 rejection and allowance of claims 17 to 19 and 22 to 31 is respectfully requested.

**IV. Rejection of Claims 18, 21,
27 and 30 Under 35 U.S.C. § 112**

Claims 18, 21, 27 and 30 were rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention.

Regarding claim 18, the Office Action alleges that it is not clear if the treating step is the same or a different step from the esterifying step of claim 17. Applicants submit that claim 18, as amended, is clear and overcomes the 35 U.S.C. § 112 rejection. Accordingly, allowance of claim 18 respectfully requested.

Regarding claim 21, the Office Action states that it is not clear whether the percentages are by weight or volume. Applicants respectfully disagree. Claim 21 recites that the

percentages provided are "relative to 100% total volume". Therefore, Applicants submit that is clear from claim 21 that the percentages are by volume.

Regarding claim 27, the Office Action alleges that there is no antecedent basis for "surface contacted". Applicants submit that claim 27, as amended, overcomes the 35 U.S.C. § 112 rejection. Therefore, allowance of claim 27 is respectfully requested.

Regarding claim 30, the Office Action alleges that there is no antecedent basis for solution constituents not crosslinked. Applicants respectfully disagree. Claim 30 itself introduces uncrosslinked removing solution. Notwithstanding the above, Applicants submit that claim 30, as amended, overcomes the 35 U.S.C. § 112 rejection. Therefore, allowance of claim 30 is respectfully requested.

In summary, Applicants submit that the claims, as amended herein, are sufficiently definite and obviate the 35 U.S.C. § 112 rejection. Therefore, withdrawal of the 35 U.S.C. § 112 rejection and allowance of claims 18, 21, 27 and 30 is respectfully requested.

**V. Rejection of Claims 17 to 20, 22,
 23 and 27 Under 35 U.S.C. § 102(b)**

Claims 17 to 20, 22, 23 and 27 were rejected under 35 U.S.C. § 102(b) as anticipated by White, Proceedings of the IEEE, 57(9), pp. 1610 to 1615, 1969 ("White"). Applicants respectfully submit that claims 17 to 20, 22, 23 and 27 are allowable for at least the following reasons.

Claim 17 relates to a method for treating a surface of a ceramic hybrid substrate including ceramic surface areas and metallic surface areas. Claim 17, as amended, recites the step of esterifying only the ceramic surface areas.

White purportedly relates to a method for encapsulating entire integrated circuits in siloxanes to protect the circuit from high humidity and liquid environments. See Abstract. Nowhere do White disclose, or even suggest, the step of esterifying only the ceramic surface

areas, as recited in claim 17. Accordingly, White does not disclose, or even suggest, all of the limitations of amended claim 17.

Nor would it have been obvious in light of White to esterify only the ceramic surface areas, as coating only a portion of the surface of the White integrated circuit would defeat the stated purpose of encapsulating the White circuit in the first place, namely, water proofing. See Abstract.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that White does not disclose, or even suggest, the step of esterifying only the ceramic surface areas of a ceramic hybrid substance, as recited in amended claim 17.

In summary, it is respectfully submitted that White does not anticipate independent claim 17. Therefore, allowance of independent claim 17 is respectfully requested.

As for claims 18 to 20, 22, 23 and 27, which ultimately depend on claim 17 and therefore include all of the limitations of claim 17, Applicants submit that these claims are patentable for at least the reasons submitted above in support of the patentability of claim 17. Therefore, allowance of claims 18 to 20, 22, 23 and 27 is respectfully requested.

**VI. Rejection of Claims 17 to 20
and 27 Under 35 U.S.C. § 102(b)**

Claims 17 to 20 and 27 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,213,864 ("Wong"). Applicants respectfully submit that claims 17 to 20 and 27 are allowable for at least the following reasons.

Wong purportedly relates to an electronic device silicone encapsulant. As shown in Figure 1, the entire top surface of the circuit is coated including metal layer 13 and bonding pads 14. Nowhere do Wong disclose, or even suggest, the step of esterifying only the ceramic surface areas, as recited in claim 17. Accordingly, Wong does not disclose, or even suggest, all of the limitations of amended claim 17. Therefore, Wong does not anticipate claim 17.

Nor would it have been obvious in light of Wong to esterify only the ceramic surface areas as coating only a portion of the surface of the Wong integrated circuit would not serve the stated purpose of encapsulating the Wong circuit in the first place, namely, completely sealing the circuit from the environment. See col. 1, lines 41 to 44.

As for claims 18 to 20 and 27, which ultimately depend on claim 17 and therefore include all of the limitations of claim 17, Applicants submit that these claims are patentable for at least the reasons submitted above in support of the patentability of claim 17. Therefore, allowance of claims 18 to 20 and 27 is respectfully requested.

**VII. Rejection of Claims 21, 24 to 26
and 28 to 31 Under 35 U.S.C. § 103(a)**

Claims 21, 24 to 26 and 28 to 31 were rejected under 35 U.S.C. § 103(a) as unpatentable over White. Applicants respectfully submit that claims 21, 24 to 26 and 28 to 31 are allowable for at least the following reasons.

Claims 21, 24 to 26 and 28 to 31 are ultimately dependent on claim 17 and therefore include all of the limitations of claim 17. Nowhere does White disclose, or even suggest, the step of esterifying only the ceramic surface

areas, as recited in amended claim 17. Therefore, White does not disclose, or even suggest, all of the limitations of claims 21, 24 to 26 and 28 to 31, which ultimately depend from claim 17.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

As indicated above, White does not disclose, or even suggest, the step of esterifying only the ceramic surface areas, as recited in amended claim 17, from which claims 21, 24 to 26 and 28 to 31 ultimately depend. Therefore, claims 21, 24 to 26 and 28 to 31 are not obvious over White and withdrawal of the 35 U.S.C. § 103(a) rejection is respectfully requested.

Moreover, it is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine White do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the

reference relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding.

Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to

modify or combine a reference to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation, outside of Applicants' application, for modifying or combining White to provide the claimed subject matter.

The Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a "technologically simple concept" -- which is not the case here -- there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person having no knowledge of the claimed subject matter to "make the combination in the manner claimed," stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

The Office Action alleges that while White does not teach that non-crosslinked material is removed, it would have been obvious to one of ordinary skill in the art to have incorporated such a "conventional" step in the White process. See Office Action at p. 5, par. 11. Applicants respectfully traverse this contention to the extent that it is maintained and request that the Examiner provide specific evidence to

establish this assertion and/or contention under 37 C.F.R. § 1.104(d)(2) or otherwise. In particular, it is respectfully requested that the Examiner provide an affidavit and/or that the Examiner provide published information concerning this assertion. This is because this rejection is apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no support was provided for these otherwise conclusory and unsupported assertions. (See also M.P.E.P. § 2144.03).

The Office Action further alleges that it would have been obvious to one of ordinary skill in the art to have optimized the solution and cure characteristics through no more than routine optimization. See Office Action at p. 5. Applicants respectfully disagree. As indicated in M.P.E.P. § 2144.05 (II)(B), a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 U.S.P.Q. 6 (C.C.P.A. 1977). Respectfully, the Office Action does not allege nor does the prior art disclose that the volumes of siloxane and isopropanol, let alone their relative volumes, as recited in claim 21, are result-effective variables. It is therefore respectfully submitted that the rejection of claim 21 based on the unsupported allegations of optimization be withdrawn.

In view of all of the foregoing, it is respectfully submitted that White does not render obvious claims 21, 24 to 26 and 28 to 31. Therefore, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claims 21, 24 to 26 and 28 to 31 is respectfully requested.

VIII. New Claims 33 to 35

New claims 33 to 35 have been added herein. It is respectfully submitted that new claims 33 to 35 do not add any new matter and are fully supported by the present application, including the Specification. Because claims 33 to 35 include

features analogous to the features recited in claims 17 to 32
it is respectfully submitted that claims 33 to 35 are
allowable for reasons similar to those given above in support
of the patentability of claims 17 to 32.

IX. Conclusion

It is therefore respectfully submitted that all of
the presently pending claims are allowable. All issues raised
by the Examiner having been addressed, an early and favorable
action on the merits is earnestly solicited.

Respectfully submitted,

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